

## The latest Ordovician Event of the Yangtze Platform in South China based on the carbon isotope profiles

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The environmental changes across the Ordovician Silurian boundary is accepted as one of the Phanerozoic Big Five mass extinction events (Brenchley et al.1994) and the extinction event had two primary pulses caused by the latest Ordovician Hirnantian glaciation (Sheehan 2001).

Yangtze Platform is one of the best study areas in the world Ordovician Silurian Boundary sections because Yangtze Platform was located as continental sea in the equatorial zone and shallow and deeper marine sedimentary facies on the same basin. The late Ordovician and early Silurian strata are exposed at several places in Yangtze Region, South China. Wangjiawan section, Yichang in Hubei province, was authorized as the Global

Stratotype Section and Point (G.S.S.P.) of the base of the Hirnantian Stage by complete graptolite biozones (Chen et al.2001).

The  $\delta^{13}C$  profiles of organic matter at Wangjiawan section show a positive excursion in the Kuanyinchiao Bed, (Wang et al.1997,1997, Hamada 2001, Chen et al. 2006, Kotani 2006), which is a marker of the uppermost Ordovician system in Yangtze Platform.

In this study, we performed high resolution XRD, total organic carbon content (TOC), organic carbon isotope ( $\delta^{13}C_{org}$ ) from black shale and inorganic carbon isotope ( $\delta^{13}C_{carb}$ ) from carbonate and calcareous shale at Wangjiawan section and Honghuayuan section (Tongzi, Guizhou province, located in south 100 km of Chongqing, 550 km SW from Wangjiawan section).

As the result, it became clear that secular variations of  $\delta^{13}C_{org}$  and  $\delta^{13}C_{carb}$  of both sections are not consistent. The  $\delta^{13}C_{org}$  profiles from both sections show a positive shift, while the  $\delta^{13}C_{carb}$  profile from Honghuayuan section shows a negative shift in the Hirnantian, latest Ordovician.